

Notice of Allowability

Application No.

09/678,544

Examiner

Martin Lerner

Applicant(s)

TENPAKU ET AL.

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2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09 June 2005.
2. ☒ The allowed claim(s) is/are 1 to 4, 6 to 9, 11, and 16 to 18.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 09 June 2005
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other Comment Re Drawings.

EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Regarding independent claims 1, 2, and 11, the prior art of record doesn't disclose or reasonably suggest converting pitch just before a minus peak. *Cooper et al.* discloses converting pitch at a minus peak, at a zero crossing, or 30 degrees lagging from a zero crossing. Thus, *Cooper et al.* does not disclose or suggest inserting samples just before a minus peak as in an embodiment of Applicant's Specification at Page 18, Line 25 to Page 19, Line 10. Even 30 degrees from a zero crossing cannot be considered equivalent to "just before" a minus peak. Also, *Cooper et al.* notes pitch modification for human voice or music. Human voice involves speech waveforms that implicitly depend to some degree upon vocal tract shape. However, *Cooper et al.* is not expressly concerned with waveforms for human voice depending upon vocal tract shape, as claimed.

Applicants' Specification discloses converting at segment γ for a glottal closure. (Page 3, Lines 20 to 27) Figure 1 shows γ as a segment between the zero crossing and the minus peak. Applicants' Specification, Pages 14 to 17, Figure 15, discloses inserting samples for pitch modification at the last zero crossing before the minus point. However, Applicants' Specification, Page 18, Line 25 to Page 19, Line 10, discloses an embodiment where samples are inserted along the segment γ (or unevenly along the

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segment y). Applicants' Specification, Page 3, Lines 4 to 14, discloses that a minus peak corresponds to a glottal closure, and that the prior art puts too much emphasis on maintaining the waveform around the minus peak, resulting in undesirable frequency components and unnatural synthetic speech.

Regarding independent claims 3 and 4, the prior art of record does not disclose or suggest a speech synthesis apparatus and computer instructions, where various pitch lengths are stored for each speech unit and pitch lengths of speech waveform data in the speech database are prepared by modifying a contour of a waveform in which the waveform is converging on a minus peak during a periodical unit.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

COMMENT RE DRAWINGS

New corrected drawings in compliance with 37 CFR 1.121(d) are required in the Application as formal drawings are now required for Figures 5 and 7. The Application now being allowed, corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Figures 5 and 7 filed 08 October 2004 are informal because they contain handwritten corrections for the words "determining" in Figure 5, Step S5, and "pointing" in Figure 7, Step S27. The proposed drawing corrections filed 08 October 2004 provide a correct spelling of these words, but formal drawings are required to eliminate the handwritten characters.

CONCLUSION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ML
6/21/05


Martin Lerner
Examiner
Group Art Unit 2654